



Science Community Focus

Liverpool School Embraces Life Science Leaders of Tomorrow



Liverpool Life Sciences UTC, the first school in the UK to specialise in science and healthcare, has collaborated with some of the country's leading life sciences experts to create an unrivalled learning environment for its students.

Based in Liverpool's Baltic Triangle, this specialist school has been supported since its inception by local and national partners, including Redx Pharma, The University of Liverpool and Actavis, in the formation of a project-based learning syllabus.

By bridging the gap between academia and hands-on experience, students aged between 14 – 19 are prepared for the life sciences roles of tomorrow by incorporating traditional learning with a contemporary hands-on approach.

Students Become Scientists with Life Sciences Leaders

Redx, located in Liverpool and Alderley Edge, Cheshire, has played a key role in the development of the Liverpool Life Sciences UTC and as a major sponsor provides students with extended work placements. This March, life sciences students spent four weeks working on a project set and supported by their own Redx mentors, which allowed them to build their technical abilities in an environment engineered around life sciences.



Liverpool Life Sciences UTC Year 13 on placement at Redx

Anastasia Roberts, a Year 13 student said: "My experience with Redx Pharma has confirmed my enthusiasm for working in the pharmaceutical industry as a medical chemist. My time here has shown me the importance of patience and flexibility, areas that can be applied to my studies at school. I've also grown to understand the importance of learning from research and my mistakes – these attributes are vital if you wish to succeed!"

During her placement with Redx, Anastasia assisted the Anti-Infectives team by performing supervised

chemical reactions and gained hands-on experience conducting experimental procedures.

Neil Murray, CEO of Redx Pharma, commented: "The exposure to a range of inspiring working environments is one of the many fantastic elements of the Liverpool Life Sciences UTC curriculum. Ensuring that the next generation of young scientists has the requisite practical skills to thrive in the dynamic world of Life Science is a critical part of equipping them for future careers in the sector.

"Our team is working to develop novel solutions to some of the most pressing global healthcare issues facing our generation and we're delighted to be partnering with the UTC to provide their students with real-world insights and experiences."

Similarly, student's ambitions are being realised through a partnership with world-class microbiology expert, Mast Group Ltd, a supplier of diagnostic products, for clinical, industrial and veterinary testing, with offices in Bootle and across the world in locations including South Africa and Europe.

In February, the company invited student Rachel Winrow, 17, to embark on a work-placement programme to benefit her knowledge of microbiology: "My school arranged for me to spend four weeks working with Mast and its microbiology team after hearing that I'd like to study tropical medicine at The University of Liverpool. I was looking to spend a month overseas examining the prevention of malaria following my placement, so this opportunity with Mast was perfect for me!

"I spent my four weeks at Mast shadowing microbiologists, investigating the effectiveness of antibiotics and helping to design new antibiotics that could combat modern infections," Rachel added.

As well as contributing to the school's placement scheme, Mast has also donated state-of-the-art equipment to the school's laboratories, allowing life sciences students to explore DNA construction.



Vice Principal, Ian Parry, Erin Vaughan, Prof John Dyer, Rachel Winrow and John Hobson

Phil Lloyd, principal at Liverpool Life Sciences UTC, said: "It's a delight to be working with Mast, this partnership will provide our young people with an opportunity to gain invaluable work placement experiences that contributes to a well-rounded learning experience."

Transmitting Virus Breakthroughs

As well as engaging with local businesses, Liverpool Life Sciences UTC has also collaborated with a number of renowned UK institutions and academics to present scientific break-through.

In late-2014, the school launched a series of TED-style lectures designed to challenge stereotypes and educate young people on health conditions, vaccines and drug development. The first of these 'UTC Transmits' was hosted on October 22 by the University of Liverpool and also in association with The Liverpool School of Hygiene and Tropical Medicine, and business partner Novartis.

More than 300 students joined members of the medical community, academics and industry specialists - all united to discuss malaria, a topic of specialist interest to the aforementioned Liverpool institutions. The event delivered break-through research with interactive presentations



Life sciences students discover the nature of viruses at UTC Transmits or UTC Transmits seminar in action

and seminars and was supported by a Twitter based Q&A sessions throughout the day.

Speakers included; Professor David Hornby from University of Sheffield and Liverpool Life Sciences UTC, Emeritus Professor Michael Clarkson formerly of the University of Liverpool, Dr Mark Paine from Liverpool School of Tropical Medicine and Liverpool Life Sciences UTC student, Rachel Winrow, who contracted malaria whilst completing humanitarian work in Tanzania.



Chloe O'Connor (left), 16, and Kayleigh Kearney (above), 16, practise their suturing skills learnt in training

Professor Clarkson gave a presentation on the nature of mosquitos and new methods of control that are in place across the world. Students also engaged with Professor Paul O'Neill who introduced anti-malarial endoperoxides that were developed in Liverpool and highlighted the importance of isoquine to delegates and students from Liverpool Life Sciences UTC.

"Through initiatives such as UTC Transmits, our students are given a unique opportunity to experience an undergraduate lifestyle whilst still at college. Whether our students are looking towards a high-end career in chemistry, disease control or looking to involve themselves with a career in tropical medicine, UTC Transmits provides them with an introduction to these different but exciting pathways," said Lyndsay Macaulay, Director of Enterprise at Liverpool Life Sciences UTC.

"Perspectives from different medical professionals plus one-to-one sessions with older University students has introduced a broader educational environment for our young people, and has contextualised the subjects studied in the classroom."



Students and Principle with Key Speakers from UTC Transmits events

During the second instalment of 'UTC Transmits' held on February 11, students were involved in discussions and listened to presentations regarding the global fight against HIV.

Beth Gwyther, a Year 13 student at Liverpool Life Sciences UTC, said: "UTC Transmits studies one subject from lots of different angles – we've heard from professors from The University of Liverpool and consultants from the Royal and Broadgreen hospitals, but we've also heard from sexual health workers and people living with the virus. UTC Transmits gave me a thorough understanding of HIV including the prevention of the virus and the creation of modern vaccines."

Attendees present at the event included Life Sciences UTC students, nationally respected academics and key-speakers including Professor Bill Paxton, University of Liverpool Institute of Global Health, Dr Mas Chaponda, Consultant HIV Physician, Royal Liverpool and Broadgreen University Hospital Trust and Dr Mark Lawton, Consultant Sexual Health and HIV also from Royal Liverpool and Broadgreen University Hospital Trust.

UTC Transmits will continue to engage young people and stimulate academic debate with a series of programmes developed in conjunction with the country's leading scientific figures.



From left to right: John Dyer, Ali Balek, Cloe O'Rourke, Dr Mas Chaponda, Dr Mark Lawton, Professor Bill Paxton, Dr Jonathan Brown, Dr Alex Lawrenson

STEM Assured Status

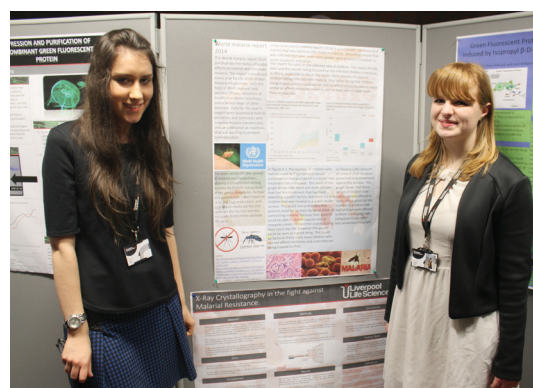
The school was awarded STEM Assured status at the end of 2014 for its best practice employer engagement programme and support of students pursuing a STEM-related career (science, technology, engineering and mathematical subjects). It is one of only 20 colleges in the country to receive this nationally recognised award.

Vice Principle Ian Parry commented: "Receiving STEM Assured® status means incredible things for the future of our school and being presented with this accolade is a testament to our staff and students.

"Liverpool Life Sciences UTC reach out locally and nationally to businesses and members of the scientific community to provide our students with vocational education pathways. STEM Assured® status now highlights our school as an institute of excellence and will ensure positive relationships between the school and our future partners."

University Ready Students

To prepare its students for academic environments of the future, the school encourages students to discover elements of University-life and introduces them to academic presentations. As part of this process the school's partners from the University of Liverpool and the Liverpool School of Tropical Medicine (LSTM), are invited to attend scientific poster exhibitions that highlight its students' research into malaria, micro-organisms and infection. The most informative, industry ready, poster is chosen by the partners in attendance.



Katie Doyle, 17 and Heather Brown, 16, teamed up to present their findings on microbiology

"These exhibitions allow our students to communicate their complex findings and relay them in a succinct manner to their peers and members of the scientific community. By engaging with projects such as this academic poster exhibition and interacting with industry professionals and local employers, our students are provided with a combination of academic and vocational education that contributes to a well-rounded learning experience," said Dr John Dyer, lead teacher of science innovation at Liverpool Life Sciences UTC. Student Chloe O'Rourke, 17,

added: "In the past I've analysed how microbiology can be studied and my latest poster focussed on the ways in which florescent, or glow-in-the-dark proteins help researchers understand the nature of particular cells," explained the 17 year old.

"Poster displays are a great opportunity to share ideas and I feel confident stepping into a University environment already understanding the importance of presentations."

Liverpool Life Sciences UTC is also reaching out to the wider North-West area and invites the region's young people to discover their potential on a monthly basis within its specialist environment.

Saturday Science and Maths clubs operated by Life Sciences UTC staff, students, business and university partners during spring and summer terms, allow young people aged 13-14 years old to meet up, explore ideas and nurture their academic talents.

Dr Jonathan Moore, teaching leader in science at Liverpool Life Sciences UTC, said: "Saturday Science Clubs provide students with a rare opportunity to complete small research projects over a prolonged period. They can plan, execute and analyse experiments in the same way that research scientists do, taking them beyond the restraints of the current science curriculum that is delivered within the schools."

The school will continue to work closely with its partners to provide a new concept of education through the celebration of PBL (project-based learning) by Liverpool Life Sciences' talented students and staff.

To find out more about Liverpool Life Sciences UTC visit: <http://lifesciencesutc.co.uk/>.



Students experimenting with chocolate during British Science Week.